BACKGROUND–

Art Everyday—Artifacts!

The first peoples of Maine used their knowledge of the natural world to survive by making the tools they needed out of the raw materials that surrounded them. These tools included carefully fashioned stone points, beautifully shaped woodworking tools, tools and ornaments of bone, and decorated pottery. Did they also make tools and decorative objects from other natural materials, like wood and birchbark? Probably, but we can only speculate on this, since these more perishable materials decay quickly in Maine's acidic soils. In fact, even bone tools are found only in the more recent archaeological sites, and usually only in coastal shell middens where calcium carbonate from the large numbers of clam shells actually changes the chemistry of the soil, making it less acidic, and so preserves organic materials like bone.

STONE TOOLS

Most archaeological artifacts found in Maine are made from stone. The two basic ways of making stone tools are by pecking out the basic tool shape and then sharpening the cutting edge by abrasion, or by striking off flakes of stone ever more precisely and finely to shape the final tool. Artifacts made by these methods are called "ground stone tools" and "chipped stone tools," respectively. Early tool makers had to know what sorts of rocks to use for each type of tool, and had to master the complex technology needed to actually shape the rocks.

Ground stone tools are made from rocks soft enough to be pecked into shape, but hard enough to hold a sharpened edge. These include varieties of basalt, quartzite, and slate. Tools made this way were probably resharpened as long as the tool was useful, since they undoubtedly took a long time to make originally. Ground stone tools from Maine include stone axes, gouges, and adzes, which are probably woodworking tools. Many of these tools may have been hafted, or attached to a handle, but the wooden parts have decomposed over time and we can only speculate as to exactly how they were used. Some sites in Maine also have ground stone slate points, sometimes with incised designs on them. These lovely objects would seem to be too fragile for regular use, and may have been ceremonial in nature.

Chipped stone tools are made from stone with a fine grained texture and a lack of internal structure, which allows the rock to fracture in predictable ways when struck with another rock. In Maine, chert, felsite, and quartz were used. Since we don't really know how people long ago made stone tools, much of what we hypothesize comes from the experience of contemporary archaeologists who try to make replicas of these tools. People who make tools out of stone are called flint knappers. After choosing an appropriate stone, shaping begins with a technique called percussion flaking, in which large flakes are chipped off a stone core with a second stone used as a hammer (a hammerstone, to archaeologists). Some of these flakes are just waste material, but some have a sharp enough edge that they may have been used immediately as temporary scraping or cutting tools. To make finer tools like spear points or arrowheads, tool makers select a large flake and further thin it by striking off flakes with tools made of antler (called billets). The final finishing of the edges is done by a technique called pressure flaking, in which small flakes are carefully pushed off the edge of the tool with an antler, bone or wood punch. This technique is also used to shape the stems and notches of stone points.

The entire process of making a chipped stone tool required a great deal of skill and knowledge. The tool maker had to know what type of stone to use, the amount of force needed to break the stone, and the correct angle at which to hit the stone to break off the appropriate-sized flake. Too much force, or at the wrong angle, could snap the tool in the middle. In fact, archaeologists find many broken or half-made tools – evidence of the difficulties inherent in chipped stone technology.

BONE TOOLS

Less common than stone tools due to their perishable nature, bone tools are most frequently found in Maine in coastal shell middens. Many of the same techniques used in stone tool making can be applied to bone, which can be ground, chipped and polished. Antler, generally harder than bone, can also be used as a raw material for tools.

The simplest way to fashion a tool from bone is to split the bone with a hammerstone and work the fragments into tools. A more controlled method is to use a stone flake or engraving tool to cut parallel, closely-spaced grooves in the piece of bone or antler, and then to split slivers from the core and finish them.

Bone tools include awls, points, scrapers, fleshers and beamers (tools used in preparing animal hides), barbed harpoon tips and bone flutes. Sometimes, these tools are found with finely incised designs—evidence of taking utilitarian objects into the realm of art objects.

POTTERY

Some time about 3,000 years ago, people in Maine began making and using clay pots. Archaeologists have never found a complete pot in Maine, but broken fragments of these pots, called sherds, are among the most common artifacts from that time period. After the arrival of the Europeans, clay pots were very quickly replaced with iron and copper kettles.

Native American pottery was made from clay found along the banks of streams and rivers, and at some outcroppings along the coast. Temper consisting of fibers, sand or crushed rock or shell was added to the clay before working it. Temper reduces the extremes of shrinkage and expansion during firing, and allows for a more even distribution of heat during both firing and use, thus reducing breakage. Pots were shaped by hand. Evidence from sherds shows that coiling was the usual method of pot construction. The coils were smoothed over and sometimes the exterior of the pot was decorated before it was baked and hardened in an open-air fire.

Archaeologists can use characteristics of form, type of temper and style of design to date sites where pottery is found. The earliest pots found in Maine were roughly conical, with pointed bases, and were tempered with coarse crushed stone. They were fairly large, holding about a gallon. They had thick walls and were decorated with impressions of cordage, netting or basketry. Later pots retained the conical shape, but were tempered with fiber or crushed shell. They were decorated in a series of different styles. A tool with comb-like teeth pressed

repeatedly into the clay created a type of decoration known as "dentate stamping." If the tool was pressed into the clay and then pivoted at one end to create a zig-zag design, the style is called "rocker dentate stamping." Pots were also decorated by pressing a small stick wrapped with cordage into the pliable clay to create "cord-wrapped stick" style pottery. Markings were often made in rows. Pots were also decorated with impressions made by shells, pointed objects (likely sticks or bone awls) and even fingernails. Over time, pots became thinner walled and more rounded, and the latest pots were sometimes decorated with incised linear decoration.

PRE-EUROPEAN MAINE

Archaeology is the branch of anthropology that scientifically studies the physical remains of past human life. Archaeology deals with things people have left behind them, their material culture. From this material culture, archaeologists try to put together a picture of how people lived in the past.

Archaeologists divide the pre-European history of Maine into time periods. Each period is represented in the archaeological record by distinctive types of artifacts that are recognizable and characteristic. These artifacts reflect adaptations to changing environments and ways of life.

Twenty-thousand years ago, the land that Europeans would later call Maine was buried under an ice sheet that in some places was over a mile thick. The weight of the ice actually depressed the land, and the amount of the world's water frozen into glaciers lowered sea level. About 18,000 years ago, the ice sheet began to melt, retreating northward as it did. The land, released from the weight of the glaciers, began to rise, as did sea levels, fed by the melting ice. By the time the first people arrived in Maine about 11,500 years ago, the coastline extended further out into the Gulf of Maine and sea level was considerably lower than it is today.

PALEOINDIAN PERIOD (12,000 – 9,500 years ago)

During this period, the last glaciers had just left the land and the climate of the time was very cold. Maine resembled Arctic tundra (treeless plains) or taiga (boreal forests), although the environment may have been richer than today's tundra. People probably hunted big game and followed herds of grazing animals into the area—possibly caribou, musk-ox, woolly mammoths, and other now-extinct herbivores. Only a few Paleoindian sites are known in Maine, and it may be that population levels were low at that time.

The people of the Paleoindian Period made very beautiful, distinctive spear points known as fluted points. Fluting was a way of making a tool in which a long channel was removed from the center of the base of the point, probably so that it could be hafted onto a split-stick spear. They also left behind scrapers, gravers and drills made of a variety of exotic stones not found nearby. This suggests either a wide-ranging population or an established trade network to acquire raw materials from a considerable distance.

THE ARCHAIC (9,500 to 3,000 years ago)

As the climate continued to warm and sea level to rise, artifacts characteristic of the Paleoindian Period were replaced by those of a period archaeologists call the Archaic. During the Archaic, a long era which covers more than half the time people have lived in Maine, coniferous forests gave way to deciduous trees, and people probably practiced a lifestyle of general hunting and gathering.

For the early and middle parts of the Archaic Period, there are few archaeological sites known in Maine. This could be for a variety of reasons—the population density was low and so there aren't many sites. Then-coastal sites are now covered by rising sea levels, or perhaps archaeologists aren't looking in the right places.

By the late Archaic, about 6,000 years ago, the climate in Maine was actually warmer than it is today and the area was covered with primarily deciduous forest. People of this era left behind a variety of tools – plummets (fish net weights), adzes, gouges (woodworking tools, like chisels), ground slate tools, and distinctive spear points. People probably lived in small, seasonal groups, relying on hunting (moose, deer, bear, and small animals), fishing, and gathering of berries and nuts. Many of the tools may have been used for woodworking activities, such as making dugout boats. Communities living near the coast relied heavily on marine resources like clams, cod, sturgeon, swordfish, porpoises and seals.

At the very end of the Archaic Period, new and distinctive tools emerged. This period is called the Susquehanna. People during this period made the widest and thinnest spear points known, and apparently relied more heavily on hunting than fishing. Susquehanna sites are often found in the same places as earlier Archaic sites, but post-date them in time.

THE CERAMIC PERIOD (3,000 to 500 years ago)

The Ceramic Period is marked by the introduction of pottery (ceramics) into the archaeological record. Pottery-making probably spread into Maine from the south. The climate in Maine had cooled somewhat until it was similar to what we know today. There appears to have been substantial population growth, and people relied on a wide variety of resources. Tools made from types of rocks not found in Maine indicate connections to people as far away as Labrador and the Hudson River Valley.

The Ceramic Period probably saw the introduction of the bow and arrow and the birchbark canoe. During this period, people relied on a wide variety of foods. Along the coast, shellfish were an important resource. Sites called shell middens—literally, garbage heaps of clam shells, food bones, broken bone and stone tools, and pottery—are common along the Maine coast and give us much of our information about this period.

THE CONTACT PERIOD (1500 AD to present)

The Contact Period is that time in which first contact was made between Native Americans and Europeans. The earliest European voyagers were fishermen and explorers. Later, traders and settlers moved in. Trade became important to both Native Americans and Europeans. Furs of all kinds (but especially beaver) were exchanged for metal tools, guns, trinkets, clothing, alcohol and other items. Bows and arrows were quickly replaced by guns and bullets, stone axes and gouges by similar tools made of metal, and ceramic pots or birchbark containers by iron or copper kettles. The old tools remained, however, buried at sites that archaeologists would excavate hundreds of years later.

Today, when we can easily buy so much of what we need, we can only wonder at the skill, knowledge and care that went into making these beautiful tools. Now, archaeologists use these tools in a new way—as evidence to piece together the stories they tell us about lifeways long ago.

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Maine Audubon Society, *Habitat* Vol. 5, No. 1 (January, 1988). ***[The issue is called "Prehistoric Maine" and has several useful articles.]***

Snow, Dean R. 1980. *The Archaeology of New England*. Academic Press, New York, NY.

Wilbur, C. Keith. 1978. *The New England Indians*. The Globe Pequot Press, Chester, CT. ***[This has good illustrations of how ancient tools may have been hafted and used, but use it carefully since it covers all of New England and many of the tools it shows are not known in Maine.]***

INTERNET RESOURCES

Arch Net <http://archnet.aus.edu>. ***[Go to the subject areas for good information on pottery, stone tools and more.]***

Native Tech: Native American Technology and Art <http://www.nativetech.org>. ***[This site has lots of good information, but be aware that it is not specific to New England.]***

Provincial Museum of Alberta <http://www.pma.edmonton.ab.can/archeo/aspects/technol>. ***[Again, this site is not about New England, but has good information on stone tool technology.]***

OTHER

Teachers Guide, Curriculum Guide and Student Handouts for Teaching Tools, Maine Prehistoric Archaeology Teacher Resource Kit, by Richard T. Will, Archaeological Research Consultants, Inc., Ellsworth, ME, 1997.